

Claims

1. A humidity control system which includes an adsorber (80) for controlling the humidity of air to be processed using an adsorbent and a refrigerant circuit (100) for operating on a
5 refrigeration cycle and thermally regenerates the adsorber (80) with heat of refrigerant (106) in the refrigerant circuit (100),

wherein the humidity control system is configured so that the sensible heat zone (R) for the refrigerant (106) is larger than that for R22 when compared in terms of refrigeration cycles having substantially the same discharge temperature (B).

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2. The humidity control system of claim 1, wherein the refrigerant circuit (100) is configured so that the pressure of the refrigerant (106) in the high-pressure side of the refrigeration cycle is higher than the critical pressure of the refrigerant (106).

15 3. The humidity control system of claim 1, wherein the refrigerant (106) is a single refrigerant of R32 or a mixed refrigerant containing R32 in the range from 75 weight % inclusive to 100 weight % exclusive.

20 4. The humidity control system of claim 2, wherein the refrigerant (106) is CO₂ refrigerant.

5. The humidity control system of claim 1, wherein

the adsorber (80) is composed of a first adsorption element (81) and a second adsorption element (82), and

25 the humidity control system is configured to run a batch operation consisting of a first behavior in which the first adsorption element (81) adsorbs moisture in a first air and the second adsorption element (82) is regenerated by heating with a second air heated up

by the refrigerant (106) in the refrigerant circuit (100) and a second behavior in which the second adsorption element (82) adsorbs moisture in the first air and the first adsorption element (81) is regenerated by heating with the second air heated up by the refrigerant (106) in the refrigerant circuit (100) by alternately switching between the first and second behaviors.

5 behaviors.